



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 6TH AVENUE
SEATTLE, WASHINGTON 98101

DATE: See date of Section Chief signature

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Waste Connections LRI-304th St Landfill, Graham, WA

FROM: Daniel Heins, Environmental Scientist
Air Toxics Enforcement Section, EPA Region 10

THRU: Derrick Terada, Acting Section Chief
Air Toxics Enforcement Section, EPA Region 10

TO: File

BASIC INFORMATION

Facility Name: Waste Connections LRI-304th Street Landfill

Facility Location: 30919 Meridian East, Graham, WA 98338

Date of Inspection: On Site Inspection: May 2, 2022
Virtual Conference: May 4, 2022

EPA Inspector(s):

1. Daniel Heins, Environmental Scientist ^{a,b}
2. Brendan Whyte, Air and TRI Compliance Officer ^a

Other Attendees:

1. Olivier Moi, Environmental Specialist – Waste Connections ^{a,b}
2. Kevin Green, District Manager – Waste Connections ^a
3. George Duvendack, Site Manager – Waste Connections ^a
4. Kris Adair, Landfill Supervisor – Waste Connections ^b
5. Karam Singh, Consultant – SCS ^a
6. Travis Bendahl, Consultant – SCS ^{a,b}
7. Trevor Priestley, Environmental Health Specialist – Tacoma-Pierce County Health Department (TPCHD) ^b
8. Jon Holton, Engineer – Puget Sound Clear Air Agency (PSCAA) ^c

^a Attended conference

^b Attended surface emissions monitoring (SEM)

^c Was at initial presentation of credentials but attended in neither the SEM nor the conference

Contact Email Address: kevin.green@wasteconnections.com

Purpose of Inspection: Follow up on September 7 & 8, 2021 inspection, perform comparative SEM

Facility Type: Municipal solid waste (MSW) landfill

Regulations Central to Inspection: 40 C.F.R. Part 60, Subpart WWW; 40 C.F.R. Part 62, Subpart OOO; 40 C.F.R. Part 63, Subpart AAAA; 40 C.F.R. Part 98, Subpart HH

On Site (5/2) Arrival Time: 9:40

On Site (5/2) Departure Time: 16:00

Virtual Conference (5/4) Start Time: 10:00

Virtual Conference (5/4) End Time: 11:40

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

SITE OVERVIEW

The following information was obtained verbally from Waste Connections representatives, including their consultants, during the virtual conference.

Company Ownership:

Land Recovery, Inc. (LRI) is the business name for Pierce County Recycling, Composting and Disposal, LLC. LRI has been a subsidiary of Waste Connections, Inc., for over ten years.

Operations Overview:

The LRI 304th Street Landfill (the Landfill) is a municipal solid waste (MSW) landfill located in Graham, Washington. The Landfill is a lined RCRA Subtitle D site, having started operations in 1999. The site is one contiguous unit, with approximately 128 acres presently constructed. Its design capacity is 32.3 million tons. There are roughly 21 million cubic yards in place currently. It is projected to operate until 2036. While there is no expansion planned, there is space to do so. The Landfill receives approximately 4,500 to 5,000 tons of waste per day.

The gas collection and control system (GCCS) routes gas to two flares and to a gas to energy plant, all on the north end of the site. Both flares are enclosed, one with a 3,000 standard cubic feet per minute (scfm) capacity, and one with a 1,500 scfm capacity. The adjacent gas-to-energy plant is run by a separate company and has three Caterpillar 3520 engines with no pre-treatment and a capacity for roughly 1650 scfm in total. Recent total collected flows from the Landfill have been in the 4,200 to 4,300 scfm range.

SITE TOUR — MAY 2, 2022

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☐ Provided Small Business Resource Information Sheet
- ☒ Small Business Resource Information Sheet not provided. Reason: Not a small business
- ☒ Provided CBI warning to facility

Data Collected and Observations:

EPA conducted an abbreviated SEM survey of the facility. EPA used one ThermoFisher Toxic Vapor Analyzers 2020 (TVA2020) to perform EPA Reference Method 21 for the SEM. Waste Connections did not have an instrument available to confirm EPA readings, and Waste Connections staff declined offers to view EPA instrument readings. Olivier Moi, Travis Berndahl, and Trevor Priestly joined EPA for the full day of SEM; Kris Adair accompanied during the morning. Olivier Moi observed EPA calibration of the TVA and upwind/downwind readings and expressed no concerns.

The construction occurring during the September 2021 EPA inspection had been completed, and the sections of the GCCS that were disconnected were back online. On the west slope of the landfill, just south of the recently constructed final cover, the over 2-foot diameter main header pipe ended, joined to a significantly smaller pipe (roughly 8-inch diameter) that collected rest of the west slope. Olivier Moi stated that this was temporary.

EPA observed odors of landfill gas upon arrival and repeatedly during the survey.

EPA identified and flagged 38 parts of the landfill in exceedance of 500 parts per million (ppm) methane, summarized in Appendix B. Exceedances were identified at penetrations, tarp holes/edges, in ditches, and in exposed waste, among other locations. Multiple flagged exceedances included multiple points of exceedance in the vicinity, and some represented broad areas of exceedance. An area of the northwest corner of the Landfill in Cell 1 was identified as an area of concern, as there appeared to be no gas collection in the area and widespread exceedances. Additionally, the tarped area around the meeting of Cells 2B, 3A, 5, and 6 appeared to be visibly inflated with landfill gas, with the tarp being pushed upward away from the surface and held down in place with sandbags and webbing straps, giving the area a quilted appearance. The edges of this section were buried under gravel, and the inflated appearance was stable and constant, independent of wind. Holes in the tarp had strong odors and resulted in measured exceedances over one foot in the air. The TVA had its reading maxed out, indicating explosive concentrations of methane.

The day began with light rain that went away for the bulk of the monitoring, with some rain returning toward the end of the day. With the return of rain, Waste Connections staff indicated that we should no longer traverse/monitor any of the tarped slopes for safety reasons. EPA accommodated this and chose a path to monitor and walk off the landfill away from the tarped areas.

EPA observed multiple points of leachate breakout on the surface of the landfill, in some places intermingling with pooled runoff, leaving an oily sheen. In one of these areas, Waste Connections noted that the cover here was petroleum contaminated soil. Waste Connections noted that the leachate breakouts observed were unlikely to drain to the stormwater ditch around the landfill and should stay contained in the landfill.

At the end of the monitoring/site tour, EPA and Waste Connections agreed to have the inspection conference virtually on May 4th using Microsoft Teams.

Photos and/or Videos: were taken during the inspection. See Appendix A.

Field Measurements: were taken during this inspection. See Appendix B.

INSPECTION CONFERENCE — MAY 4, 2022

- ☒ Provided U.S. EPA point of contact to the facility
- ☒ Provided CBI warning to facility

EPA showed Waste Connections a map of the path walked during the on-site SEM survey and the exceedances detected.

Staff Interview:

EPA asked whether Waste Connections considered the landfill to be under Part 60 Subpart XXX or Part 62 Subpart OOO. Waste Connections stated that they are working with PSCAA on this question, but recognize that in the absence of an identified date for Subpart XXX applicability then Subpart OOO would have been effective in June 2021, and that they began penetration monitoring during SEM accordingly. The landfill did not increase its permitted capacity after 2014, though it has conducted phased construction in line with the pre-existing waste permit since then. EPA asked if the site had opted to comply with Part 63 Subpart AAAA requirements in lieu of the relevant parts of Subparts XXX/OOO. Waste Connections stated they would need to check their answer for that to be sure.

Waste Connections tracks waste arriving at the scale house using the Waste Works program, and this is used to output the annual tonnages by waste category included in their Annual Report, and provided to EPA in the September 2021 Inspection. EPA asked if Waste Connections tracked whether certain wastes were inert or non-degradable, and Waste Connections stated that that there is no direct tracking of this, but that they would get back to EPA on the methods used to classify waste for gas generation modeling and greenhouse gas reporting. When asked for elaborations on certain specific waste types, Waste Connections stated that the industrial waste category includes a wide variety of special wastes including recycling residuals, ash was primarily clean wood ash from one customer, the “other contaminated soils” category includes all contaminated soils and is primarily petroleum-contaminated, and that the medical waste category is non-classified waste from hospitals (essentially regular refuse).

EPA asked if any wells or gas collection devices were added to address the exceedances from the September inspection that were above 500 ppm three times in one quarter. Waste Connections stated that they could not specifically identify wells that were added for those exceedances but

that they did add collectors after the inspection, and they would follow up to see if any of those wells may have addressed those exceedances. EPA asked more broadly about what corrections were done after the September inspection, noting that the SEM report submitted after the September inspection provided no indication of what actions were done. Waste Connections stated that they did a mix of plugging holes, replacing cover, adding boots to wells, and bringing wells back online, but that they would follow up on this.

Waste Connections stated that with the new regulatory changes, they were switching their SEM from being done in-house to being conducted by SCS consultants, starting in September 2021. Waste Connections highlighted that past SEM and the EPA September inspection monitored areas that had not had waste in place for more than 5 years, and they were no longer going to monitor surface methane concentrations in these areas. EPA asked how Waste Connections was tracking the applicability dates. Waste Connections stated that they track cell construction and date of first waste placed, using the initial placement date for that section. Waste Connections clarified that some cells were constructed in multiple phases, and these sub-phases are the sections used.

EPA asked Waste Connections how they ensure sufficient density of gas collectors when they take wells offline. Waste Connections responded that they try to minimize offline time but that they would need to follow up on this. EPA noted that their reports appeared to indicate that some wells were permanently removed without replacement, and repeated the question. Waste Connections stated that they would need to follow up on this. EPA asked if Waste Connections was still shutting off wells when they exceeded wellhead parameters (as indicated in previous Subpart WWW Semiannual Reports) rather than performing corrective measures as outlined in the regulations. Waste Connections stated that with the changes in the regulations they were evaluating their processes. EPA asked about the lack of gas collection for a large area in Cell 1 where during the SEM there were multiple exceedances. Waste Connections stated that historically this was old waste and then large amounts of soil were placed there, so they didn't expect much gas generation. EPA asked if there used to be wells that were removed, and Waste Connections stated that they were not sure. Waste Connections stated that since new waste is being placed in this area that they plan on adding gas collection. Waste Connections noted that they submitted a gas management plan to TPCPH and that they were working on a new design plan to submit to PSCAA to replace the existing 2010 plan.

EPA asked what the highest temperatures in the landfill wells were at this time. Waste Connections stated that temperatures only went up to around 145 degrees Fahrenheit. EPA asked about historic elevated temperatures and how these were handled. Waste Connections stated that some wells were abandoned due to high temperatures, and noted the higher operating values and monitoring outlined in the 2010 Design Plan.

EPA asked how Waste Connections responds to elevated readings at their gas migration probes. Waste Connections stated that these probes are for "performance", and that the compliance point is the property line. Waste Connections stated that they have conducted barhole surveys closer to the property line to ensure gas was not migrating past the property line. Waste Connections stated they plan to install probes further from the landfill. EPA asked if Waste Connections made operational changes when they saw recurring elevated reading in the 20-30% methane range at

the “performance” probes. Waste Connections stated that they have tried to make changes to lower these levels but, ultimately, they evaluate compliance with the barhole surveys.

EPA asked how Waste Connections ensures it has the capacity to fully control landfill gas collected while ensuring a sufficient extraction rate. Waste Connections stated that they look at both gas models and existing collection data to make this determination. EPA asked how Waste Connections deals with capacity concerns when one of the flares is down, noting that Flare 1 had reported significant downtime in some of the previously submitted reports. Waste Connections stated that when a flare goes down, gas is diverted to the other flare to the extent that it has capacity and that system vacuum on the landfill is reduced as needed, reducing the gas collection rate. Waste Connections does not direct the engines at the power plant to control more gas, and Waste Connections considers its flares sufficient for control. If too much gas is sent to one of the flares, it will automatically shut down. EPA asked about previous issues identified on Flare 1 with the “UV scanner”, Waste Connection stated that this had a finicky wire and that this is no longer an issue. EPA asked how operations have changed with the removal of the previous start-up, shutdown, and malfunction provisions, noting that Waste Connections appeared heavily reliant on these in the past. Waste Connections stated that a lot of the previously observed regularly recurring issues had resolved before the effective date of this change and that they were operating in compliance with the new regulations.

Requested documents:

Some documents requested had previously been requested but not provided during the September inspection and were re-requested here.

- All wellhead monitoring data, 2017-present
- Well water liquids level survey data, 2017-present
- Flare flow (and temperature) monitoring data with the 15-minute intervals
- 2017 & 2021 Annual Report
- Any semi-annual (and SSM) reports since those provided during the September Inspection
- Any SEM reports since the September Inspection not a part of the above semi-annual reports
- Map with cells and subunits used for determining the 5-year cut-off, along with dates for initial waste placement in each of those cells
- Most recent GCCS map
- Updated number for final cover acreage
- Gas flow to the power plant with the 15-minute intervals
- 2021 GHGRP (Part 98) Report
- Updated well installation data, with coordinates, for 2021 and 2022
- Any well disconnections or abandonments with dates (and reconnection dates as applicable) since April 2021 not reflected in the requested semi-annual reports
- Gas migration probe data for December 2021 to present, along with any barhole survey reports since 2017
- Most recent gas generation estimation with inputs/methods
- Copies of the calibration gas certifications sheets for the SEM surveys for 2021
- Gas control plan sent to TPCPH

Concerns:

- EPA, again, detected significantly more exceedances of the surface methane standard than past reported SEM surveys on site, even with minimal surveying of Cell 6, no surveying of Cell 3, and the restoration of gas collection in areas that had none during the September inspection.
- The northeast corner (Cell 1) is an area lacking gas collection devices, with repeated points of exceedance.
- The tarped area around the meeting of Cells 2B, 3A, 5, and 6 appeared to be visibly inflated with landfill gas, with explosive levels of gas being measured coming out of it, indicating both an environmental concern and a safety hazard.
- It was not clear how Waste Connections is ensuring sufficient density / adequate coverage in its gas collection system.

DIGITAL SIGNATURES

Daniel Heins, Report Author

Derrick Terada, Acting Section Chief

APPENDICES AND ATTACHMENTS

Appendix A: Digital Image Log

Appendix B: Field Measurement

APPENDIX A: DIGITAL IMAGE LOG

Inspector Name: Daniel Heins

Archival Record Location: US EPA SharePoint

2022-05-22 Images

Image #	File Name	Time (PDT)	Flag #	Description
1	20220502 103209.jpg	10:32	1	Cell 6 leachate riser, missing gasket on pump power line
2	20220502 105344.jpg	10:53	-	Slumped soil in final cover area - NW corner/Cell 4B
3	20220502 110742.jpg	11:07	-	Leachate breakout mixing with stormwater on surface on landfill, Cell 4A north of flag 2
4	20220502 111500.jpg	11:15	2	WE233 with tarp wrapped
5	20220502 112327.jpg	11:23	3	Tarp edge and auto fluff
6	20220502 112819.jpg	11:28	4	Tarp edge and auto fluff
7	20220502 113337.jpg	11:33	5	Tarp edge and auto fluff
8	20220502 113341.jpg	11:33	-	Large area with auto fluff and no visible gas wells 0 NE Corner, Cells 1/2A
9	20220502 113718.jpg	11:37	6	Pair of cracks in soil with visible discoloration
10	20220502 114924.jpg	11:49	7	Ditch near TW57 with exposed waste
11	20220502 115444.jpg	11:54	8	Ditch with exposed waste and TW58
12	20220502 115907.jpg	11:59	9	Stake tarp hole
13	20220502 120213.jpg	12:02	10	Stake tarp hole
14	20220502 120654.jpg	12:06	11	Stake tarp hole
15	20220502 121212.jpg	12:12	12	Shredder fluff and mud
16	20220502 121336.jpg	12:13	13	Tarp hole with discoloration
17	20220502 122846.jpg	12:28	15	Well 315 in tarped area
18	20220502 123159.jpg	12:31	16	Tarp edge and auto fluff
19	20220502 123516.jpg	12:35	17	Well 313 in tarped area
20	20220502 124042.jpg	12:40	18	Stake in tarped area
21	20220502 124259.jpg	12:42	19	Hole in tarp by header
22	20220502 135404.jpg	13:54	-	Leachate breakout, cell 6
23	20220502 140031.jpg	14:00	21	Stake in tarp
24	20220502 140411.jpg	14:04	22	Tarp hole
25	20220502 140935.jpg	14:09	23	Very extended not connected temp well, pooled water on tarped area
26	20220502 141345.jpg	14:13	24	Hole in top of abandoned temp well in tarped area
27	20220502 141826.jpg	14:18	25	Stake near infiltration in water pooled on tarp
28	20220502 141829.jpg	14:18	-	Tarped area of landfill
29	20220502 142442.jpg	14:24	26	Stake / hole in tarp
30	20220502 142517.jpg	14:25	-	Tarped area visibly inflated with landfill gas
31	20220502 143148.jpg	14:31	28	Edge of inflated tarp, held down by gravel
32	20220502 143556.jpg	14:35	29	Edge of inflated tarp, held down by gravel
33	20220502 143945.jpg	14:39	30	Tarp edge by culvert, sections showing inflation at top
34	20220502 144502.jpg	14:45	31	Ditch near(ish) to Well 284
35	20220502 145126.jpg	14:51	32	Unidentified well in bare dirt

2022-05-22 Images, continued.

Image #	File Name	Time (PDT)	Flag #	Description
36	20220502_145527.jpg	14:55	33	Well 281 (leaning) in bare dirt. Exposed tire.
37	20220502_150115.jpg	15:01	34	Well 267 with boot, gravel/dirt
38	20220502_151358.jpg	15:13	35	Well 266 in tarped area
39	20220502_151918.jpg	15:19	-	Gas bubbling out in puddle of stormwater mixed with leachate, top of Cell 4B
40	20220502_152026.jpg	15:20	-	Surface water pooled in petroleum contaminated soil area with oil sheen, top of Cell 4B
41	20220502_152029.jpg	15:20	-	Leachate breakout and exposed waste, top of Cell 4B
42	20220502_153429.jpg	15:34	-	Junction of header pipe with significantly smaller "temporary header" on west slope, top of Cell 4B
43	20220502_153620.jpg	15:36	36	WE157 in grass
44	20220502_154028.jpg	15:40	37	WE158(?) in grass with attempt to seal top with duct tape

APPENDIX B: FIELD MEASUREMENT DATA

Measured Exceedances

Flag #	Reading (ppm/%)	Description/Notes	Latitude	Longitude
1	2000	Cell 6 leachate riser, missing gasket on pump power line (audible leak)	46.97070704	-122.296974
2	1200	WE233, at base of well. Odor	46.97370947	-122.2929384
3	1%	Tarp edge NE corner, near auto fluff. Exceedances in surrounding area	46.97372004	-122.2912779
4	600	Tarp edge and in middle of auto fluff (multiple points in vicinity)	46.9737176	-122.2907856
5	2000	Auto fluff + tarp edge and multiple tarp holes nearby	46.9738279	-122.2905897
6	2000 & F/O	Pair of cracks in soil with visible discoloration	46.97368913	-122.2906407
7	1200	In ditch near TW57 with exposed waste. Multiple exceedances in area including 40' down ditch.	46.97284498	-122.2910542
8	1600	In ditch near TW58	46.97256497	-122.2909978
9	6800	Stake tarp hole	46.9722739	-122.2909762
10	750	Stake tarp hole (plus every tarp hole between 9 and 10)	46.97208	-122.29104
11	800	Stake tarp hole (plus all but 3 between 10 and 11)	46.97194472	-122.2911385
12	800	In shredder fluff ~50' south of TW60	46.97183612	-122.2912801
13	3% & F/O	Tarp hole and in neighboring ditch	46.97170927	-122.2913329
14	8000	Ditch near WE 284 (and in multiple points between 13 and 14)	46.97160205	-122.2914128
15	1%	Well 315, out top	46.97204933	-122.2941221
16	4000	Tarp edge in fluff	46.97185119	-122.2942434
17	1%	Well 313 in gap in tarp	46.9719002	-122.2946892
18	800	Stake in tarp	46.97143897	-122.2951689
19	1900	Hole in tarp (multiple in area)	46.97132482	-122.2952116
20	1600	Hole in tarp	46.97110125	-122.2955065
21	1%	Stake in tarp and neighbors	46.97118529	-122.2942574
22	5%	Tarp hole	46.97138596	-122.2941896
23	4000	Very extended not connected temp well	46.97143284	-122.2941969
24	700	Hole in top of abandoned temp well	46.97151173	-122.2937704
25	8000 & F/O	Stake near flooded infiltration sump	46.97145077	-122.293546
26	5% & F/O	Stake / hole in tarp	46.97149316	-122.293222
27	900	Hole in tarp inflated with landfill gas (reading taken at 1' above hole)	46.97159939	-122.2930486
28	600	At edge of tarp, multiple in area	46.97154264	-122.2928964
29	800 & F/O	Tarp edge and nearby hole in tarp	46.97144229	-122.2924186
30	9000	Tarp edge by culvert (reading taken at 1' in air), strong odor	46.97130006	-122.292018

Measured Exceedances, continued.

Flag #	Reading (ppm)	Description/Notes	Latitude	Longitude
31	1400	Ditch near(ish) to Well 284	46.97148015	-122.2915413
32	1600	Unidentified well at base	46.97185395	-122.2914857
33	1700	Well 281 (leaning) at base	46.97237444	-122.291293
34	1300	Well 267 at base	46.97205457	-122.2924779
35	4000	Well 266 at tarp gap	46.97230379	-122.2940373
36	2000	WE157 at base	46.97282941	-122.2967079
37	1%	WE158(?) at top (bad duct tape seal attempt)	46.97260379	-122.2966852
38	2300	WE207 at base	46.97210011	-122.2966831

Calibration and Instrument Information

EPA used a ThermoFisher Toxic Vapor Analyzers 2020 (TVA2020), designated as TVA A95732. The EPA TVA2020 response time is approximately 4 to 5 seconds.

	Calibration gas ppm	A95732 ppm
10:10 calibration check	500	503
10:10 calibration check	10000	1.04%
13:00 drift check	500	486
16:00 drift check	500	480

EPA calibration gases

Composition	Lot #	Expiration
Air zero grade THC <1 ppm	DBJ-1-24	March 2023
Methane in air 500 ppm	1-167-64	June 2024
Methane in air 10,000 ppm	228894	February 2023

Background readings:

Upwind: 1.5 ppm

Downwind: 2 ppm

Map of Detected Exceedances

SEM exceedance locations with flag numbers plotted over map of the Landfill dated to March 2021. Base map acquired during September 2021 inspection. Approximate monitoring paths included, derived from GPS data: blue for morning, green for afternoon. North is to the left.

